



Department of Environmental Quality
Collection System Laws & Regs

2020



PLEASE
consider others and . . .



- **Silence all phones & devices**
- **Limit phone use to breaks**
- **If you must use the phone - step out of class**

Thank you!

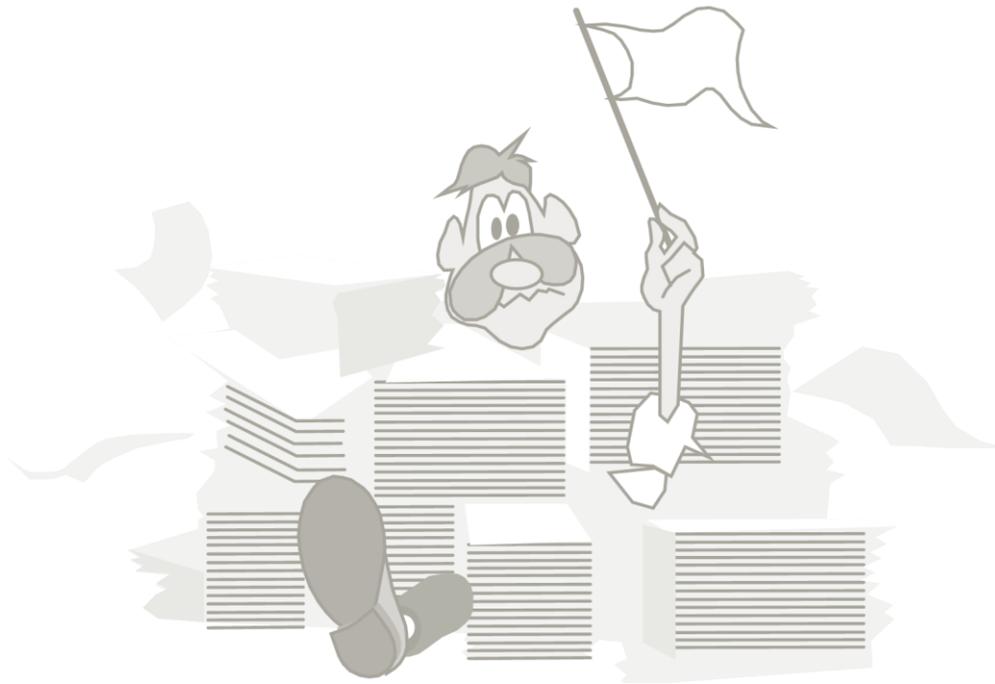
NC Operator Certification Program

NC DEQ – DWR - PWSS

Steve Reid

919.707.9108

steve.reid@ncdenr.gov



Department of Environmental Quality



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Operator Certification



Animal Waste	Drinking Water	Wastewater
		

The state's certification programs serve to:

- Protect the public health;
- Conserve and protect the water resources of the state;
- Protect public investment in water treatment facilities;
 - Provide for the classification of treatment facilities;
- Administer examinations for treatment facility operators; and
 - Certify the competency of treatment facility operators.

Water Resources

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- Operator Certification**
 - [Animal Waste Operator](#)
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Miscues plagued cleanup of spill, review shows

Sewage floods creeks

Sewage spill endangers rare mussel

A series of mishaps — from a pair of faulty hoses to pump waste to the premature release of work crews — has plagued the cleanup of last week's spill of 1.5 million-gallon sewage.

City workers were on the scene with the spill, but it was not until late in the afternoon that the spill's effect on drinking water and human health was known. Inspectors visit the site.

The state divisions of Emergency Management and Water Quality were not called until 5 p.m., and the spill was not contained within the 24-hour notification period required by law but a

Only scuba divers will be able to determine the spill's toll on the dwarf wedge mussel, an endangered creature that survives only in a few streams in the region.



THOMASVILLE TIMES
www.tvilletimes.com

Heavy rains wreak havoc on sewer lines
by Eliot Duke
1 month ago | 227 views | 2 | 4 | 0

The City of Thomasville reported six wastewater spills as a result of Monday's rains.

An estimated 168,620 gallons of untreated wastewater spilled into the Yadkin River Basin from six separate locations in the city with the most occurring at Davidson Pump Station on Lake Road. Some 82,000 gallons of wastewater spilled into South Hamby Creek from that location. City Manager Kelly Craver said that was one of several municipalities that suffered similar spills from the heavy rain.

"There was a lot of localized flooding in the region," Craver said. "The rain was concentrated over a short period of time. I've seen estimates that Thomasville received as much as 3-5 inches of rain. That much water causes hydraulic failure."

Other spills included 31,000 gallons from a manhole on King Row in Jimmy's Hamby Branch, 27,000 gallons from a Concord Street manhole into Flanks Creek, and 27,000 gallons from a manhole on High Meadow Road into Flanks Creek.

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Cave-ins plague sewer line along Smith Creek



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October 10, 2011

6 Comments

Waste water contaminates Briar Creek
WNCN-TV
Posted: Wednesday, Oct. 05, 2011
8 people recommend this. Be the first of your friends.

People in east Charlotte have been told to stay away from Briar Creek for a few days after a waste water leak caused a contamination.

Charlotte-Mecklenburg Utilities said a waste water pipe broke on Sunday, likely caused by rain that eroded the creek bank.

Russell Harris didn't know his dog was in any danger Tuesday. "It's a surprise," he said. Harris has been coming to the dog park at the Mint Museum for 15 years.

"I'm going to have to take notice. I'll have a hard time stopping her from going in there," Harris said about his dog.

"You don't want kids playing in it," said CMU spokesperson Tony Dubois, who called this spill a "monster."

"It's a huge impact. I don't want to pull no bones."

The spill has killed 3,000 fish and is endangering more.

As far as animals, pets, absolutely, you do not want them running through the water," Dubois said.

CMU is trying to fill the creek with clean water to give the remaining fish a better chance of surviving.

How is to get the pipe fixed and stabilize the creek bank, which should take several days.

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Heavy rain causes Carrboro sewer spill

ARTICLE COMMENTS (0)

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FROM STAFF REPORTS
Tags: news

CARRBORO -- An Orange Water and Sewer Authority crew responded to an untreated wastewater spill from a sewer manhole near Rosewalk Lane and Berryhill Drive around 9:30 a.m. Wednesday.

The overflow, which was stopped about 11 a.m., occurred when stormwater entered an OWASA sanitary sewer during heavy rain. OWASA estimated the overflow at about 3,600 gallons, based on the known duration of the spill.

OWASA reported the spill to the N.C. Division of Water Quality, as is customary, and issued a news release as required for a wastewater spill of 1,000 gallons or more.



Municipal sewage overflows dwarfed hog waste discharges

🕒 October 15, 2018 👤 Laurinburg Exchange 📁 News 💬 0

By: Dan Way - Carolina Journal

fo The Fayetteville Observer
ent to Ending Another Obama Era Program - Use HARP
Expires Dec 2018

North Carolina man shot after triggering his own booby trap

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39 million gallons of sewage: What Florence left in the Cape Fear

NC ROTC teen killed in weekend wreck

STM Southern Trust MORTGAGE

TECHNICIAN
Seven million gallons of sewage spill into Raleigh waters
Lauren Greene, Correspondent Dec 4, 2018



Crabtree Creek is a tributary of the Neuse River that has historically been known for flooding. On Nov. 13, heavy rainfall caused several towers to overflow in this, and several nearby waterways, says Hanes.

On November 13th, the city of Raleigh reported 10 sewage spills to the N.C. Department of Environmental Quality (NCEQ), spilling into bodies of water throughout the Raleigh area.

Massive sewage spills are not new to Raleigh. In 2016, Raleigh experienced the largest spill in the city's history. More than Hurricane Matthew, according to the News & Observer.

Greensboro says 1 million gallons of wastewater spilled during Michael

Updated: Oct 15, 2018 - 6:34 AM



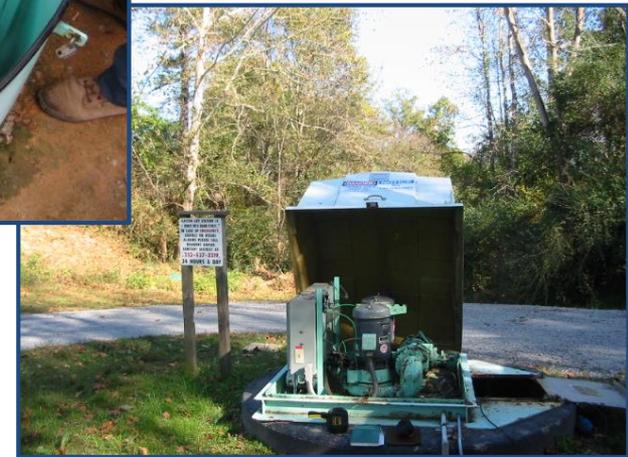
Minimum Design Criteria

- For pumping stations:
 - screened vents
 - high water audible and visual alarms
 - all-weather roadway to site
 - restricted access to buildings/equipment
 - permanent weatherproof sign
 - pump station identifier
 - 24-hour emergency number
 - instructions to call in emergency



• For pumping stations:

- no bypass or overflow lines
- designed with multiple pumps
 - peak flow can still be pumped with the largest pump out of service
- dual source or standby power supply
- pump stations designed for two + pumps shall have telemetry system



- For sewer systems and sewer system extensions:
 - a minimum velocity of:
 - 2 feet per second
 - infiltration rate limited to:
 - 100 gallons per day per inch of pipe diameter per mile of pipe
 - Minimum diameter pipe
 - 8-inch for public gravity sewers
 - 6-inch for private gravity sewers

• Storm sewers and other utilities not listed below (vertical)	24 inches
• Water mains (vertical-water over sewer including in benched trenches) (horizontal)	18 inches 10 feet
• Reclaimed water lines (vertical – reclaimed over sewer) (horizontal)	18 inches 2 feet
• Any private / public water supply source, including any wells, WS-I waters or Class I or Class II impounded reservoirs used as drinking water	100 feet
• Waters classified WS (except WS-I or WS-V), B, SA, ORW, HQW, or SB from normal high water (or tide elevation) and wetlands	50 feet
• Any other stream, lake, impoundment, or ground water lowering and surface drainage ditches	10 feet
• Any building foundation	5 feet
• Any basement	10 feet
• Top slope of embankment or cuts of 2 feet or more vertical height	10 feet
• Drainage systems and interceptor drains	5 feet
• Any swimming pool	10 feet
• Final earth grade (vertical)	36 inches

- For sewer systems and sewer system extensions:

If minimum design separations cannot be maintained:

- ductile iron pipe with joints equivalent to water main standards are required

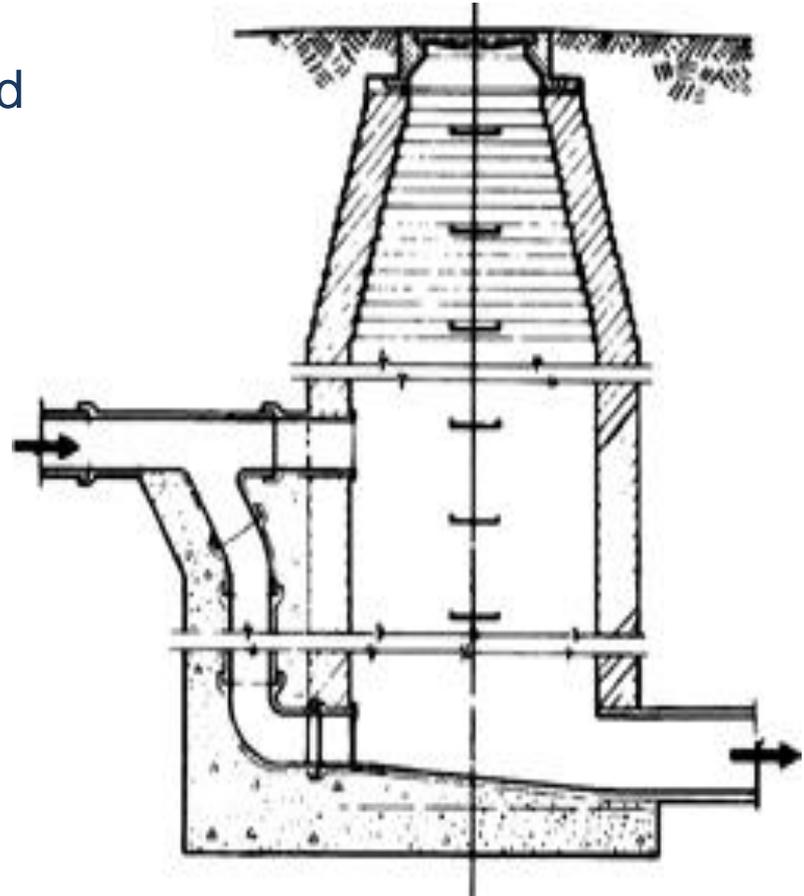


- For sewer systems and sewer system extensions:
 - Minimum cover shall be provided
 - 3 feet
 - Maximum separation between manholes
 - 425 feet



- For sewer systems and sewer system extensions:

- If invert elevations exceed 2.5 feet:
 - Drop manholes are required
- At high points of all force mains
 - Air relief valves



Classification of Systems

- Based on:
 - Grade of WWTP – OR – Population Served
 - 1,500 or less = Grade 1
 - 1,501 to 15,000 = Grade 2
 - 15,001 to 50,000 = Grade 3
 - 50,001 or more = Grade 4
 - Whichever is less!

Exam Pass Rates (since March 1999)

- 42473 exams taken overall
- 27977 passed
- 14496 failed
- 66% pass rate OVERALL
 - 90% AW-B = Highest
 - 41% WW3 = Lowest

2/2020

Pass Rates By Year

Pass Rates Since 1999

• AW-A	73
• <u>AW-B</u>	<u>90</u>
• CS-1	81
• CS-2	75
• CS-3	69
• CS-4	76
• LAND APP	69
• SURFACE IRRIG	76
• SUBSURFACE	82
• WW-1	61
• WW-2	48
• <u>WW-3</u>	<u>41</u>
• WW-4	59
• PC-1	63
• PC-2	67

Disciplinary Actions

- The WPCSOCC may take disciplinary action against a certified operator for:
 - practicing fraud or deception
 - failure to properly use care or judgment
 - failure to apply knowledge or ability
 - incompetence or inability to perform duties

Disciplinary Actions may include:

- No action...
- Letter of reprimand
- Suspension
 - Length of time may vary
 - May have conditions attached
 - Additional education, etc.
- Revocation of certificate(s)

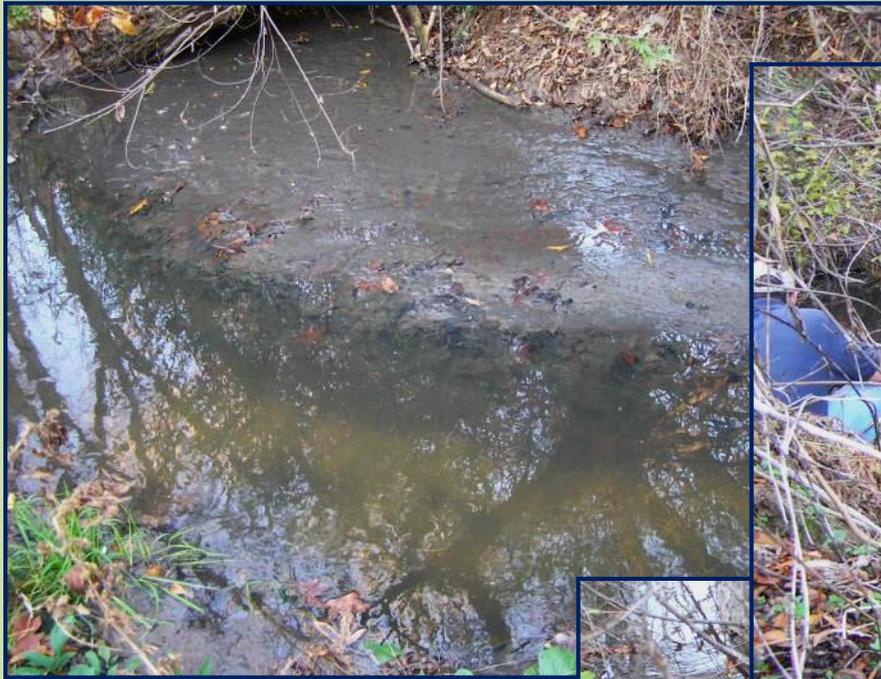
A Classic Case:

Town of Dallas in Gaston County, NC

- **0.6 MGD extended aeration plant**
 - Dual 0.3 MGD circular units
 - Secondary clarifiers
 - Gas chlorination
 - Dual aerated sludge holding tanks
 - 4 sludge drying beds
- **Discharges to Dallas Br (Class C) in Catawba River Basin**

Town of Dallas (continued)

- Summer of 2007
- DWR ISU staff sampling Dallas Branch discovered sewage solids in the creek
- 4"- 8" deep, \approx 1/2 mile from WWTP



Department of Environmental Quality







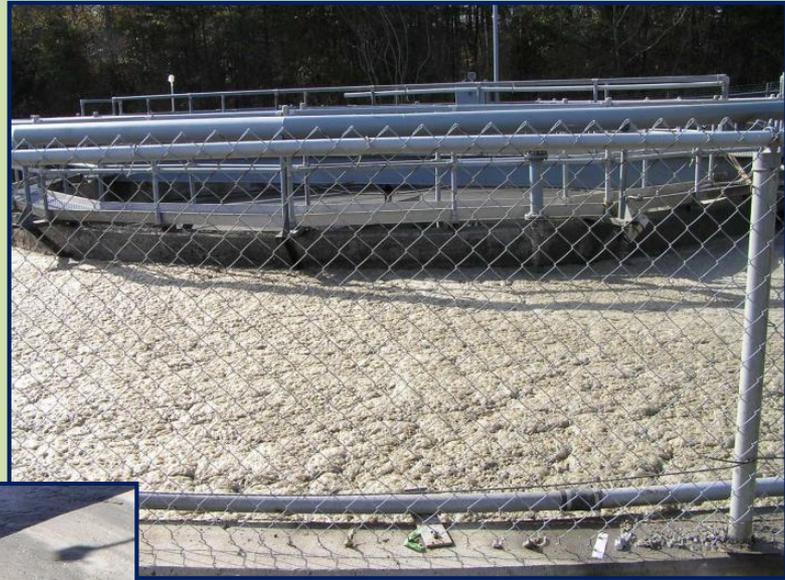
Town of Dallas (continued)

- Mooresville RO staff contacted
- Inspection at plant discovered
 - Evidence of recent bypasses & overflows
 - Treatment units out of service
 - No chlorination online
 - Operator logbook missing entries



Department of Environmental Quality









Station

1200
by Jim Fisher
is changed to
increased Retara
called Baber
on, she recommed
unit out of
FF clean at
before disconting

9-25-07	K.C. Collected Sample
9-26-07	K.C. Collected Sample
9-27-07	K.C. Wasted Basin
9-28-07	K.C. OK Plant &
10-1-07	K.C. Collect Sample
10-2-07	K.C. Collect Sample
10-3-07	K.C. Collect Sample
10-4-07	K.C. Cleared Plant
11-26-07	K.C. Repaired Co



Town of Dallas (continued)

- One half of plant not operational
- Other half FULL of solids/foam
- No chlorination: 8-12 weeks
- No operator logbook entries: 30 days
- At least 2 unreported spills
- Effluent results:
 - BOD 16x limit
 - TSS 35x limit
 - NH3 7x limit
 - Fecal 10x limit
- ½ mile of stream impacted with solids

In the end . . .

- Town fined \$141,000 for permit violations
- Both ORC & operator terminated
- ORC & operator certificates revoked
- Operator admitted falsification of data & reports
 - Federal grand jury found operator guilty
 - Potential 3 years in prison & additional fines

- OPERATOR sentenced to:

- 2 months home confinement
- two years supervised probation
- 400 hours community service
- ordered to pay \$5,000 criminal fine

- ORC sentenced to:

- one year supervised probation
- 200 hours community service
- ordered to pay \$1,000 fine

Questions ???



Steve Reid

919.707.9108

steve.reid@ncdenr.gov



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